

CA1
SS20
-70F31

3 1761 11709964 8



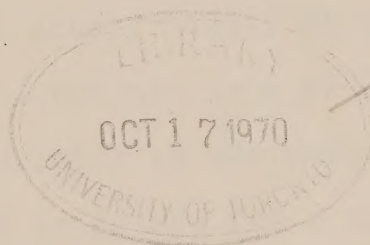
Canada. Education support
branch

[General publications]
[G-1] Financial

accessibility to higher education
in Canada during the 1960's by
E. A. la S. Fisher. 1970.

[General publications]
[8-13]

FINANCIAL ACCESSIBILITY TO HIGHER EDUCATION
IN CANADA DURING THE 1960's



Canada

E.A. la S. Fisher
Education Support Branch
Dept. of the Secretary of Stat.
Ottawa.
March, 1970.

Financial accessibility to higher education in Canada during the 1960's.

Several excellent analyses of the non-financial aspects of accessibility have appeared during the last few years.^{1/} It is generally acknowledged that there is imbalance in university representation between males and females, and among those from differing family backgrounds (e.g. based on such factors as ethnicity, occupation of father, parental education, location of home, number of children in the family, and religious affiliation). The objective of this paper is limited to an analysis of accessibility in terms of parental income. The findings do not invalidate the significance of arguments based on non-financial considerations. However, it is easier to evaluate and counter the financial restrictions to accessibility than the emotionally loaded and more intangible psychological and social restrictions that have been documented by our social scientists.

This paper analyses financial accessibility as well as readily available data will permit, but not in a theoretically optimal manner. The reader should refer to our publication Federal and Provincial Student Aid in Canada for a more comprehensive study of the theory of measuring financial accessibility.^{2/}

^{1/} John Porter, The Vertical Mosaic, Toronto: University of Toronto Press, 1955.

Christopher Jencks and David Riesman, The Academic Revolution, New York: Doubleday, 1968.

Robert M. Pike, Accessibility to Higher Education in Canada, Ottawa: to be published in 1970, by the Association of Universities and Colleges of Canada.

^{2/} Canada, Dept. of the Secretary of State. Federal and Provincial Student Aid in Canada, 1965-67 and 1967-68, Ottawa: Queen's Printer, 1970, Appendix I.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

OF AMERICAN MEDICAL ASSOCIATION, 535 N. Dearborn St., Chicago, Ill., U.S.A.

It is the policy of the Association to publish in this journal only such material as is

of general interest to the medical profession, and to exclude all material of a purely

local or personal character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

educational character, and to publish only such material as is of a scientific or

Summary

It is widely believed that children of low income families in Canada are underrepresented in our universities and other post-secondary institutions. This belief has grown out of, and been solidified by, repeated pronouncements of student organizations, politicians and the press. But such opinions are only as valid as the facts used to back them up, and to the logic carrying these facts to concrete conclusions. Unfortunately many opinions have been based either directly or indirectly on misleading data. Some recent Dominion Bureau of Statistics studies should help put the question of financial accessibility into better perspective. The new facts from these studies, lead to a new set of conclusions:

1. that children of families with an income of less than \$3,000 were better represented at Canadian universities during the 1960's than previous studies suggest;
2. that accessibility for children of families with an income of \$3,000-10,000 did not increase in relation to size of parents' income;
3. that accessibility for children of families with an income exceeding \$10,000 was generally higher than average, but not as high as hitherto believed;
4. that in terms of parental income, the families with children at Canadian post-secondary institutions are reasonably analogous to all families likely to have children old enough to attend these institutions; and
5. that financial accessibility to Canadian universities has been improving during the 1960's.

Let us examine the new facts which lead us to these conclusions.

Accessibility in 1961-62

Undergraduates

The DBS survey of 1961-62 undergraduates^{3/} produced profiles of the income distribution of students which were compared with the income distribution of taxpayers, (see Table 1).^{4/}

TABLE 1: Income Level - Students' Parents and Canadian Taxpayers

Faculty	Less than \$3,000	\$3,000 - 4,999	\$5,000 - 5,999	\$6,000 - 7,999	\$8,000 - 9,999	\$10,000 - 14,999	\$15,000 or more	Total	Median Income
	per cent								\$
Canada									
Arts - Science	10.5	21.0	14.1	17.9	11.3	13.6	11.6	100.0	6,448
Education	21.6	32.5	13.3	13.6	9.4	6.5	3.1	100.0	4,747
Engineering	16.1	28.2	15.0	14.6	10.2	10.9	5.0	100.0	5,379
Law	11.8	15.9	13.1	14.8	10.7	14.7	19.0	100.0	7,151
Medicine	14.0	21.1	11.2	14.7	11.9	12.8	14.3	100.0	6,439
Dentistry	15.0	19.6	17.0	15.1	12.1	14.3	6.9	100.0	5,905
Pharmacy	13.4	33.0	16.5	17.4	10.3	5.6	3.8	100.0	5,217
Classical Colleges	15.7	26.5	14.6	14.3	8.5	9.5	10.9	100.0	5,533
Income tax payers*	36.5	41.7	9.4	7.1	2.3	1.8	1.2	100.0	3,646

*Adapted from 1961 Taxation Statistics, Queen's Printer.

^{3/} Canada, Dominion Bureau of Statistics. University Student Expenditure and Income in Canada, 1961-62. Ottawa: Queen's Printer, 1963, Catalogue No. 81-520.

^{4/} Ibid, p. 25

This table and the text which precedes it in the 1963 DBS publication have convinced many that high-income families are grossly over-represented at Canadian universities at the expense of low-income families. The text attempts to mitigate the extent of the bias, but the message is still strong:

" A better comparison would have been with family income or even for all heads of families, but such comparison was not possible. Even assuming that instead of 36.5 p.c. receiving less than \$3,000 one read 30 p.c., the relationship would not be changed. Perhaps the most remarkable observation is that between 10 p.c. and 22 p.c. of students in the selected faculties come from families reporting incomes below \$3,000. Some of these, no doubt, were able to attend because of scholarships, fellowships, etc., and others because of good summer jobs.

From 16 to 33 p.c. reported family incomes of from \$3,000 to \$5,000. At the upper levels where 3 p.c. of the taxpayers reported incomes of \$10,000 and over, one quarter of Arts-Science students reported such family income. Similarly 34 p.c. from Law, 27 p.c. from Medicine, 21 p.c. from Dentistry, 16 p.c. from Engineering, 10 p.c. from Education and 9 p.c. from Pharmacy, all reported family incomes of \$10,000 or more. One-fifth of the classical college students reported family income in the same brackets. Considering the income levels used in this study, it would appear that where family income is from \$5,000 up, the percentage of youth going on to university is above average for the general population and as income increases the chances of entering university are improved. This is, however, also related to choice of faculty with Law and Medicine showing the steepest rise. 2/

Two big weaknesses in the general population data used are firstly that family income was not used (and this is acknowledged), and secondly that the population was not restricted to families whose head was in the age-group of parents of university students. Recently published data allow us to re-examine 1961-62 accessibility to Canadian universities.

Table 2. Percentage distribution by income of Canadian population groups, 1961.

Population Group	<u>Income level in thousands of dollars</u>					TOTAL
	<3	3-5	5-6	6-10	>10	
	per cent					
1. Income tax payers	36.5	41.7	9.4	9.4	3.0	100
2. Non-farm families	21.9	30.3	15.0	26.2	6.5	100
3. Non-farm unattached individuals and families with head aged 45-54	22.4	28.2	12.4	28.3	8.7	100
4. Non-farm families with head aged 45-54	16.1	28.3	13.5	32.1	10.1	100

SOURCES: Group 1. Canada, Dominion Bureau of Statistics, University Student Expenditure and Income in Canada, 1961-62. Ottawa, Queen's Printer, 1963, Catalogue No. 81-520.

Groups 2, 3 & 4. Canada, Dominion Bureau of Statistics. Income Distributions - Incomes of Non-Farm Families and Individuals in Canada, Selected years 1951-1963. Ottawa, Queen's Printer, 1969, Catalogue No. 13-529.

The difference between Group 1 and Group 2 is due more to the fact that incomes in Group 2 are for families (rather than individuals) than that they exclude farm incomes. The question of farm incomes will be discussed later.

Group 3 shows further increases in income when the population is limited to individuals and families whose head is aged 45-54.

The fact that parents with children of university age are earning considerably more than either other families, or unattached individuals as old as themselves, is all too frequently overlooked. The figures for Group 4 provide striking evidence that this is so.

Of the four population groups analyzed in Table 2, Group 4 is the most applicable to compare against the combined parental income of 1961-62 undergraduates. Table 3 presents the undergraduate data from Table 1 for comparison with Population Group 4:

TABLE 3 Income Level—Students' Parents and Canadian *Non-farm Families with Head aged 45-54, 1961*

Faculty	Less than \$3,000	\$3,000- 4,999	\$5,000- 9,999	\$10,000- 14,999	\$15,000 or more	Total	No. of students
	per cent						
Canada							
Arts—Science	10.5	21.0	14.1	27.5	25.2	100.0	55,240
Education	21.6	32.5	13.3	23.0	9.6	100.0	12,776
Engineering	16.1	28.2	15.0	24.8	15.9	100.0	14,631
Law	11.8	15.9	13.1	25.5	33.7	100.0	2,672
Medicine	14.0	21.1	11.2	26.6	27.1	100.0	4,253
Dentistry	15.0	19.6	17.0	27.2	21.2	100.0	1,242
Pharmacy	13.4	33.0	16.5	27.7	9.4	100.0	1,527
Classical Colleges	15.7	20.5	14.6	22.2	26.4	100.0	
<i>Non-farm families with head aged 45-54 (Group 4)</i>	<i>16.1</i>	<i>28.3</i>	<i>13.5</i>	<i>32.1</i>	<i>10.1</i>	<i>100.0</i>	

The faculties show the same relative differences, but some faculties show underrepresentation at the \$10,000 plus level (Education and Pharmacy) and all faculties show underrepresentation at the \$6,000-9,999 level. At the less than \$3,000 level Education has 21.6 percent compared to 16.1 percent in Group 4. Engineering varies only 0.1 percent in the first two levels. The greatest divergence occurs in Law (27.7 percent at less than \$5,000, compared to 44.4 percent). Clearly, accessibility to all faculties in 1961 was much better than previously suggested. Figure 1 is a graphical representation of the over-and under-representation implicit in Table 3.

Fig. 1 (see next page)

+ 10

45

9
UNIVERSITY

C

-5-

7/2

4

—

470

415

410

51

1/2
1/2

C

5

-15

Ant-S-5015000

EDUCATION

ENTREPRENEUR

ΠΡΑΚΤΙΚΟΝ

LAW

MEDICINE

PERCUTANEE

Adams - D. H. 5/1/1901

in 1906 Mc Dist. 120716

65-1961-62

3405597 100 500 1000 1961 100-1000 1000 10

1071. 11272

65-54, (Winnipeg, From Trenches)

+10

+5

%
VARIANCE

-5

-10

DENTISTRY

CLASSICAL COLLEGES

<3

5-6

>10

<3

3-5

5-6

>10

3-5

6-10

6-10

The profiles speak for themselves, but note that under-representation is greatest in the \$3000-5000 and \$5000-10,000 intervals, never in the less than \$3,000 category.

Graduates

In 1964 DBS published a report on 1961-62 Canadian graduate students^{6/} which contained a table of combined parental income for single and married students. The same kind of comparative analysis that was made with undergraduates has been repeated with the figures for graduate students and is presented in Table 4 and Figure 2:

^{6/} Canada, Dominion Bureau of Statistics. University Student Expenditure and Income in Canada, 1961-62, Ottawa: Queen's Printer, 1964, Catalogue No. 81-521.

Table 4. Income Level-Graduate students' parents and non-farm families with head aged 45-54.

Population Group	less than \$3,000	\$3,000-4,999	\$5,000-5,999	\$6,000-6,999	\$7,000-9,999	\$10,000 or more	Total	% of all graduate students
			per cent					
1. Single graduate students living at home	15.9	27.3	12.4	9.0	14.1	21.3	100	21.5
2. Single graduate students living away from home	22.7	25.3	10.8	9.3	15.1	16.8	100	38.4
3. Married graduate students	28.0	24.5	10.4	6.9	12.8	17.4	100	40.0
4. Non-farm families with head aged 45-54	16.1	28.3	13.5	13.3	18.8	10.1	100	100

Sources: Groups 1, 2 & 3- Canada, Dominion Bureau of Statistics. University Student Expenditure and Income in Canada, 1961-62, Ottawa: Queen's Printer, 1964, Catalogue No. 81-521.

Group 4 - Canada, Dominion Bureau of Statistics, Income Distributions - Incomes of Non-Farm Families and Individuals in Canada. Selected Years 1951-1955, Ottawa: Queen's Printer, 1969. Catalogue No. 13-529.

%
VARIANCE

+10

+5

0

-5

HOUSEHOLD INCOME
(1960 % of 1954 household income)

<3

3-5

5-6

6-7

7-10

>10

%
VARIANCE

+5

-5

HOUSEHOLD FARM INCOME
(1960 % of household income)

<3

3-5

5-6

6-7

7-10

>10

%
VARIANCE

+10

+5

0

-5

MARRIED (40% of household income)

<3

3-5

5-6

6-7

7-10

>10

INCOMES IN THOUSANDS OF DOLLARS

PERCENTAGE POINT DIFFERENCE OF INCOME DISTRIBUTION
OF FARM FAMILIES IN 1954 AND 1960
NON-FARM FAMILIES WITH HEADS AGED 40-54 (BORN 1910-
1920)

KEUFFEL & ESSER CO.

Figure 2 reveals a striking over-representation of graduate students from families earning less than \$3,000 or more than \$10,000. The differences between the three profiles can be partly explained in terms of age. Only 5.1 percent of single students living at home were 30 or older, compared to 11 percent of those living away, and 32.1 percent of the married students. At age 30 most students would not be relying on any income from their parents, furthermore a significant proportion of their parents could be retired and therefore living on reduced incomes.

Accessibility in 1964-65

In 1966 the Canadian Union of Students published its survey of 1964-65 predominantly English-speaking undergraduates.^{7/} The figures which generated the greatest interest and which were regarded by both the author and most readers as the most significant were those comparing undergraduates' parental income with non-farm family income.

Rabinovitch, while cautioning his readers about five incompatibilities between the two sets of data, suggested that were the figures completely comparable in these five respects, the extent of university attendance by children of low-income families would be even less than his figures show. Recently published DBS data permit us to evaluate Rabinovitch's opinion for four of the five factors he mentioned, and to re-examine accessibility in 1964-65 in the light of more relevant population data. The old and new figures are presented in Table 5.

^{7/} Robert Rabinovitch. An Analysis of the Canadian Post-Secondary Student Population, Ottawa: Canadian Union of Students, 1966.

Table 5. Percentage Distribution by Income of Canadian Population Groups, 1961 and 1965.

Population Groups and Years	Income level in thousands of dollars						TOTAL
	<3	3-5	5-6	6-7	7-10	>10	
	percent or per 95						
1. Parents of undergraduates from mainly English-speaking universities, 1964-65.	9	19	13	9	20	25	95
2. Non-farm families, 1961	22.1	32.0	14.9	10.8	14.1	5.1	100
3. Non-farm families, 1965	20.2 15.3	20.9	13.2	12.7	23.2	14.6	100
4. Non-farm families with head aged 45-54, 1965.	10.8	17.3	11.6	12.1	27.0	21.1	100
5. Families (farm and non-farm) with head aged 45-54, 1965.	13.3	17.3	11.4	11.9	26.1	20.1	100
6. Census Families with head aged 45-54, 1965.	13.3	18.3	12.4	12.2	25.5	18.4	100

Sources:

- Groups 1 & 2 - Robert Rabinovitch. An Analysis of the Canadian Post-Secondary Student Population. Ottawa: Canadian Union of Students of Students, 1962.
- Groups 3 & 4 - Canada, Dominion Bureau of Statistics, Income Distributions - Incomes of Non-farm Families and Individuals in Canada, Selected Years 1951-1965, Ottawa: Queen's Printer, 1969. Catalogue No. 13-529.
- Group 5 - Canada, Dominion Bureau of Statistics. Income Distributions by Size in Canada. 1965, Ottawa: Queen's Printer, 1968. Catalogue No. 13-528.
- Group 6 - Canada, Dominion Bureau of Statistics. Unpublished data from survey of consumer finances, 1966.

I will now discuss the five factors of incompatibility with reference to Table 5.

1. Different time bases: Rabinovitch compared 1964-65 students (Group 1) with the 1961 population (Group 2). The 1965 population data (Group 3) is obviously more pertinent, and produces a marked improvement in accessibility.
2. Age-groupings: the age of the parents of university undergraduates would tend to fall within 40-54. Incomes of this section of the population are considerably higher than those of other age groups. Group 4 shows incomes of families whose head was 45-54, and statistics elsewhere suggest that the incomes would be even higher if this group were to include families whose head was aged 40-44.
3. Farm incomes: group 5 shows the extent to which national income distribution, including net farm income, differs from national non-farm income.
4. Family income compared to combined income of parents: the income statistics which correspond closest to those of the students' parents are presented in Group 6. They still slightly overstate income because they include income of never married children living in the same household.
5. Exclusion of French-speaking universities: the student figures quoted by Rabinovitch are mainly those of English-speaking students. Other things being equal, one would expect the parental income of all students to be reduced with the

addition of data for French-speaking students. The reduction might be sufficient to offset the upward distortion caused by using census family income rather than parental income for the total population.

In reassessing 1964-65 accessibility data the first step will be to pro-rate the 5 percent of students whose parents' income is not accounted for. The student data before and after proration is presented in Table 6.

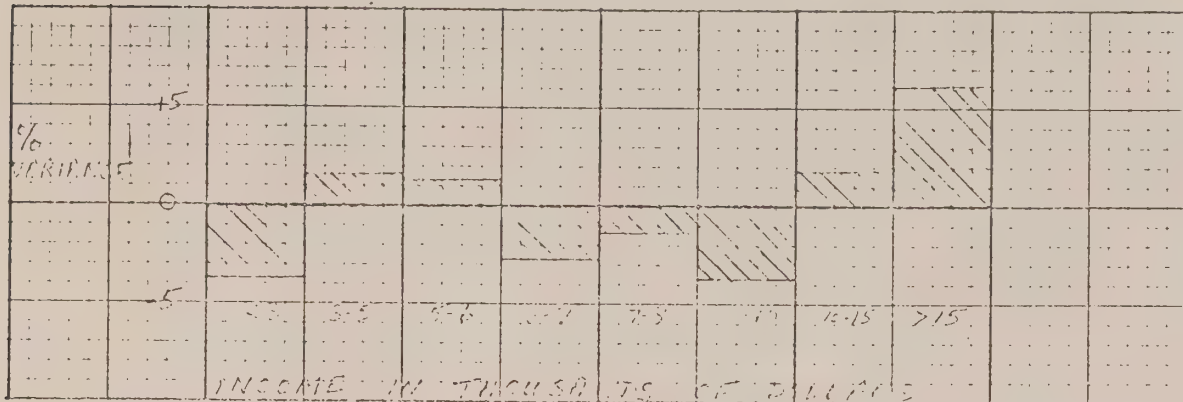
Table 6. Parents' Combined Income Before Tax, 1964-65 Undergraduates and 1965 Families.

Income	Undergraduates		Census Families with head aged 45-54
	Per 95	Percent	Percent
LESS THAN \$3,000	9	9.5	13.3
\$3,000 - \$4,999	19	20.0	18.3
\$5,000 - \$5,999	13	13.7	12.4
\$6,000 - \$6,999	9	9.5	12.2
\$7,000 - \$7,999	8	8.4	9.7
\$8,000 - \$8,999	6	6.3) 15.9
\$9,000 - \$9,999	6	6.3	
\$10,000 - \$14,999	14	14.7	12.9
\$15,000 OR MORE	11	11.6	5.5
TOTAL	95	100	100

The right hand column of Table 6 can now be used in conjunction with the centre column to draw Figure 3, a profile of undergraduate accessibility in 1964-65.

Fig. 3 PROFILE OF ACCESSIBILITY OF 1964-65 UNDERGRADUATES

(percentage points difference of income distribution of 1961-62 undergraduates' parents and 1965 census families whose head was aged 45-54.)



This profile reveals as much under-representation in the \$8,000-\$10,000 interval as in the less than \$3,000 interval. There is still imbalance at the extreme ends of the income scale, but nowhere near the extent suggested by the C.U.S. report. Any biases in the sampling of either set of data could account for a considerable proportion of the variance.

Commentators on the C.U.S. report have given exaggerated publicity to its findings, and the general public has become indoctrinated in the belief that the children of the rich are stealing places at university at the expense of students from low-income families. The pervasiveness of this now obvious exaggeration can be appreciated by referring to the many articles and speeches which have accepted Rabinovitch's original figures without question.

Accessibility in 1968-69.

The Dominion Bureau of Statistics conducted a national survey of the 1968-69 post-secondary student population. Income distributions of respondents are presented in Table 7:

Table 7. Combined Parental Income of 1968-69 Post-Secondary Students

Student Group	Parents' Income in Thousands of Dollars										TOTAL	# of Students	# Students not reporting
	<3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	>15			
1. University graduate	15.5	6.7	9.5	8.8	7.6	7.8	4.4	9.1	15.3	15.3	100	19,454	9,935
2. University undergraduate	9.1	5.8	7.8	9.9	9.5	9.4	7.1	8.9	17.9	14.5	100	203,457	41,253
3. Nursing	9.3	8.1	10.7	10.9	12.9	10.9	6.2	8.6	15.4	6.9	100	17,651	4,487
4. Teacher training	14.3	9.5	11.5	12.9	12.5	6.3	7.6	8.1	11.8	5.4	100	16,935	3,558
5. Other post-secondary	11.4	6.9	11.7	14.0	13.3	9.5	6.7	7.9	13.2	5.4	100	56,442	14,061
5. Total post-secondary	10.2	6.4	9.0	10.8	10.4	9.3	6.9	8.7	15.4	12.0	100	313,939	73,305

Income distribution figures for the corresponding wider population are not yet available, but by comparing figures for the five student groups with those for the total post-secondary population we can detect certain differences in accessibility by study program. For example, university graduates show the same peaks in the extreme intervals revealed in the study of 1961-62 graduates. University undergraduates, who represent two thirds of the total student body surveyed, reported higher parental income than other student groups. Student nurses show relatively poor representation in the greater than \$15,000 interval, and high representation from \$3,000 to \$8,000. Teacher trainees show an anticipated relatively high concentration in intervals of less than \$7,000, and representation in income levels of more than \$9,000 is correspondingly less than other student groups. The income distribution curve of other post-secondary students parallels that of teacher trainees, but is closer to the total post-secondary curve. It is interesting to compare the figures for university undergraduates with those for 'other post-secondary students': from \$8,000 and up there are proportionally more undergraduates, the surplus being drawn from each interval of less than \$8,000.

Accessibility changes during the 1960's

The three undergraduate groups for which combined parental income distributions are available, are listed in Section(a) of Table 8. Section (b) contains two sets of family income data: the first set shows income changes from 1961 to 1965; the second set shows trends since 1965.

Table 8. Income Distributions of Undergraduates' Parents and Selected Family Groups, Various Years.

Population Group	Income in thousands of Dollars							TOT.
	<3	3-5	5-6	6-8	8-10	10-15	>15	
a) <u>Combined parental income, undergraduates</u>				per cent				
1. 1961-62 arts-science	10.5	21.0	14.1	17.9	11.3	13.6	11.6	100
2. 1964-65 mainly English-speaking	9.5	20.0	13.7	17.9	12.6	14.7	11.6	100
3. 1968-69 undergraduates*	9.1	13.6	9.9	18.9	16.0	17.9	14.5	100
b) <u>Families with head aged 45-54</u>								
4. 1961 Non-farm	16.1	28.3	13.5	32.1		10.1		100
5. 1965 Non-farm	10.8	17.3	11.6	39.1		21.1		100
6. 1965 Non-farm & farm	13.3	17.3	11.4	21.3	16.7	14.3	5.8	100
7. 1967 Non-farm & farm	8.6	13.4	10.3	19.9	15.8	22.1	10.0	100

Sources:

- Group 1 - Table 1
- Group 2 - Table 6
- Group 3 - Table 7
- Groups 4 & 5 - op.cit. DRS, Income Distributions
- Group 6 - op.cit. DRS, Income Distributions by Size
- Group 7 - Canada, Dominion Bureau of Statistics. Unpublished preliminary data from survey of consumer finances, 1968.

* Income scale for 1968-69 students is \$1 more than for all other population groups.

The extent of change in accessibility from 1961-62 to 1968-69 can be gauged by comparing changes from year to year in the income distribution of Section (a) (the students' parents) and of Section (b) (the corresponding wider population group). In Section (a) incomes increase faster than those in Section (b), then accessibility is deteriorating; if the reverse is true, then accessibility is improving. Bearing in mind that the figures in Groups 1 and 2 of Table 8 are not for all undergraduates, (as in Group 3), the students' parental income appears to be increasing at a slower rate than incomes of Groups 4 & 5, and of Groups 6 & 7. It is likely that 1969 incomes will prove to be considerably higher than Group 7 incomes. The data in Table 8 suggest a considerable improvement in accessibility to undergraduate studies from 1961-62 to 1968-69.

The reliability of income data.

The DBS surveys of family income are conducted in a highly professional manner. The Bureau's specialists in form design, sampling, data collection and verification have years of experience in their field, and their family income data is widely acknowledged as being reliable.

Various sources of income, in addition to wages and salaries, are itemized for respondents to remind them of income they might otherwise overlook when completing their questionnaires. When students were asked to report their parents' income, the instructions were much briefer, and one would therefore expect them to understate their parents' income.

In the 1968-69 student survey there was a noticeable subsidiary peak of reported incomes in the \$9001-10,000 interval. Reported incomes analyzed in \$1,000 intervals rose smoothly to a peak at about \$6,000 and then fell less precipitously till \$8,000. To smooth out the descent from \$8001 to \$11,000 two percent would have to be deducted from the \$9,001-\$10,000 interval and assigned in equal proportions to the next highest and next lowest intervals. There may be legitimate reasons for the income distribution curve not being relatively smooth, but the subsidiary peak at \$9,001-10,000 may also reflect an approximation of two percent of the returns which were reported at exactly \$10,000 by students whose parents were in fact earning anything from \$8,000 to \$12,000. The two

percent assumed error would not be sufficient to alter the findings of this paper, because intervals have been combined and the net assumed error has thereby been reduced to an insignificant one percent. One might have expected another concentration at \$5,000, but this is not the case.

A more serious cause for concern is the choice of interval itself. The fact that 1968-69 student data is recorded in intervals of one dollar higher than all other data might not seem serious, but the questionnaire asked for total net income before tax (as opposed to specific ranges), and there may have been a significant number of cases where income was approximated to the nearest thousand dollars. For example, it is not known how many of the 4.7% reporting income of \$2,001-\$3,000 reported exactly \$3,000, which strictly speaking should have been part of the \$3,000-\$4,999 interval, not the 'less than \$3,000' interval. Obviously the choice of intervals could affect the profiles of financial accessibility.

Table 7 shows that 18.9% of students did not report their parents' income in the 1968-69 survey. It is difficult to say whether those who did not report came from families of higher or lower income. Of the 81.1% who did report their parents' income we do not know either how accurate their figures were, or whether they understated or overstated their parents' income. However, the differences by faculty in the income profiles for 1961-62, (illustrated in Figure 1), correspond fairly closely to differences revealed

by socio-economic indicators such as occupation of father and education of parents. The same is true for the differences by study program for 1968-69 post-secondary students (see Table 7). Another way to measure the reliability of the student data is to examine the figures reported from survey to survey for inconsistencies. The three sets of undergraduate data in Table 8 reveal no contradictory movements over the years: on the contrary, the progression is smooth and consistent with other economic indicators.

While the above observations are not sufficient to allay all fears about the reliability of student reported data, they do suggest that if major biases exist they would have to occur consistently from faculty to faculty, study program to study program, and from survey to survey.

